

taking care of a brood of the large Chinese mantid *Paratenodera sinensis* Sauss., which had been bred from the eggs in the Insectary of the Bureau of Entomology. While the mantid larvæ were young and numerous they were kept together in one insect case and frequent cases of cannibalism occurred; but as they grew larger they were separated and kept each one in its own standard Riley insect case; they became quite tame and readily took living lepidopterous larvæ, flies, or even pieces of meat held by a pair of forceps. About one dozen reached maturity. One morning one of these was offered a large living sarcophagid fly held by the forceps; the mantid, eagerly grabbing it with its graspers, squeezed some living maggots out of the abdomen of the fly; several of these maggots were eaten by the mantid, two or three crawled out on its chin and were promptly wiped into the mouth. One morning sometime later this mantid was found lying on the sand in the case, alive but weak and as it was picked up three or four full grown fly maggots pushed out through the side of the abdomen; the maggots burrowed into the sand and eventually pupated, but the flies were not reared. Mr. Busek was convinced that these maggots were the ones eaten by the mantid and that they had passed the mouth parts of the greedy mantid unharmed and had been swallowed alive, and that they in this manner accidentally had become parasitic.

CATALOGUE OF RECENTLY DESCRIBED COCCIDÆ—V.¹

By E. R. SASSCER, *Bureau of Entomology.*

Since the publication of the Catalogue of Recently Described Coccidæ—IV, October 19, 1912,¹ 4 new genera and 103 new species have been described. This makes a total of 33 new genera, 9 new subgenera, 643 new species, and 45 new varieties recorded since the appearance of Mrs. Fernald's catalogue in 1903. In preparing these catalogues the coöperation of coccidologists is earnestly solicited, especially in adding references which may have been overlooked.

¹ This catalogue is believed to be fairly complete to November, 1914, and is the continuation of a series of papers which have hitherto been published by the Bureau of Entomology, United States Department of Agriculture, as Technical Series, No. 12, Part I; Technical Series, No. 16, Part III; Technical Series, No. 16, Part IV; Technical Series, No. 16, Part VI; and Technical Series, No. 16, Part VII.

Subfamily **MONOPHLEBINÆ**.**Aspidoproctus bouvieri** Vayssiere.*Aspidiotus bouvieri* Vayss., Bul. Soc. Ent. Fr., 10, p. 333 (1914).

Habitat—Gabun, French Equatorial Africa.

On ?

Aspidoproctus serrei Vayssiere.*Aspidoproctus serrei* Vayss., Bul. Soc. Ent. Fr., 10, p. 334 (1914).

Habitat—Batavia (Java).

On?

Drôsicha lichenoides Cockerell.*Drosicha lichenoides* Ckll., Jn. Econ. Ent., vi, 1, p. 142 (1913).

Habitat—Philippine Islands.

On *Ficus nota*.**Lophococcus vuilleti** Vayssiere.*Lophococcus vuilleti* Vayss., Ann. Service Epiphyties, I, p. 424 (1913).

Fig.

Habitat—Koulikoro (?), West Africa.

On *Acacia pennata*.**Icerya genistæ** Hempel.*Icerya genistæ* Hemp., Cat. Faun. Brazil, III, S. Paulo, pp. 18, 55 (1912).

Habitat—S. Paulo, Brazil.

On *Genista scoparia*, *Lespedeza striata*, strawberry (*Fragaria* sp.).**Icerya jacobsoni** Green.*Icerya jacobsoni* Green, Tijdschr. Ent., LV, p. 316 (1913). Fig.

Habitat—Java.

On *Dombeya acutangula*.**Icerya zeteki** Cockerell.*Icerya zeteki* Ckll., Jn. Econ. Ent., VII, 1, p. 148 (1914).

Habitat—Panama Canal Zone.

On ?

Llaveia luzonica Cockerell.*Llaveia luzonica* Ckll., Bul. Am. Mus. N. H., XXXIII, Art. XXV, p. 334 (1914).

Habitat—Philippine Islands.

On ?

Monophlebus dugesi Vayssiere.*Monophlebus dugesi* Vayss., Bul. Soc. Ent. Fr., 10, p. 335 (1914).

Habitat—Guanajuato (Mexico).

On ?

Palæococcus morrilli Cockerell.*Palæococcus morrilli* Ckll., Ent. News, XXV, 3, p. 110 (1914).

Habitat—Arizona.

On ?

Subfamily MARGARODINÆ.

Kuwania britannica Green.¹*Kuwania britannica* Green, Ent. Mo. Mag., 2nd ser., xxv, p. 197 (1914).

Fig.

Habitat—England.

On birch.

Margarodes indicus Green.*Margarodes indicus* Green, Rec. Indian Mus., vii, pt. 1, No. 5, p. 69 (1912).

Fig.

Habitat—India.

On ?

Margarodes niger Green.*Margarodes niger* Green, Rec. Indian Mus., vii, pt. 1, No. 5, p. 75 (1912).

Habitat—Mysore.

In soil.

Margarodes papillosus Green.*Margarodes papillosus* Green, Rec. Indian Mus., vii, pt. 1, No. 5, p. 74 (1912). Fig.

Habitat—Mysore.

In soil under rose.

Genus NEOMARGARODES Green. Type, **erythrocephala**.*Neomargarodes* Green, Novitates Zoologicae, xxi, p. 263 (1914). Fig.**Neomargarodes erythrocephala** Green.*Neomargarodes erythrocephala* Green, Novitates Zoologicae, xxi, p. 263, (1914).

Habitat—Sahara Desert, Algeria.

On ?

Xylococcus napiformis Kuwana.*Xylococcus napiformis* Kuwana, Jn. Ent. and Zool., Pomona, vi, 1, p. 1 (1914). Fig.

Habitat—Japan.

On *Quercus serrata*.

Subfamily DACTYLOPINÆ.

Eriococcus cockerelli Essig.*Eriococcus cockerelli* Essig, Jn. Ent. and Zool., Pomona, v, 4, p. 179, (1913).

Fig.

Habitat—Sonora, Mexico.

On "Chino."

¹ This appears to be a synonym of *Steingelia goodetskia* Nass.

Eriococcus festucae Kuwana and Fukaya.

Eriococcus festucae Kuw. and Fuk., Jn. Ent. and Zool., Pomona, vi, 1, p. 2 (1914). Fig.

Habitat—Japan.

On *Festuca parvigluma*.

Kermes branigani King.

Kermes branigani King, Jn. Ent. and Zool., Pomona, vi, 2, p. 100 (1914). Fig.

Habitat—California.

On Maul oak (*Quercus chrysolepis*).

Kermes cordiformis Lindinger.

Kermes cordiformis Lindgr., Die Schildläuse, p. 286 (1912).

Habitat—Trieste, Austria.

On *Quercus robur*.

Kermes essigii King.

Kermes essigii King, Jn. Ent. and Zool., Pomona, v, 4, p. 205 (1913). Fig.

Habitat—California.

On *Quercus agrifolia*.

Kermes lindingeri King.

Kermes lindingeri King, Ent. Rundschau, xxxi, 6, p. 34 (1914).

Habitat—Germany.

On *Quercus sessiliflora*.

Kermes occidentalis King.

Kermes occidentalis King, Jn. Ent. and Zool., Pomona, v, 4, p. 206 (1913).

Habitat—California.

On *Quercus* sp.

Kermes sassceri King.

Kermes sassceri King, Jn. Ent. and Zool., Pomona, vi, 1, p. 48 (1914). Fig.

Habitat—Mass., Pa., N. Y., Calif., R. I., Canada.

On *Quercus rubra*.

Kermes waldeni King.

Kermes waldeni King, Jn. Econ. Ent., vii, 1, p. 150 (1914).

Habitat—Connecticut.

On *Quercus* sp.

Lachnodium greeni Vayssiere.

Lachnodium greeni Vayss., Bul. Soc. Ent. Fr., 5, p. 156 (1914).

Vayss., Bul. Soc. Ent. Fr., 7, p. 208 (1914).

Habitat—Madagascar.

On Coffee roots and trunks (in ground).

Phenacoccus azaleæ Kuwana.

Phenacoccus azaleæ Kuw., Jn. Ent. and Zool., Pomona, vi, 1, p. 1 (1914).

Fig.

Habitat—Japan.

On Azalea.

Trionymus violascens Cockerell.

Trionymus violascens Ckll., Jn. Econ. Ent., vi, 1, p. 143 (1913).

Habitat—Colorado.

On *Agropyron*.

Phenacoccus betheli Cockerell.

Phenacoccus betheli Ckll., Can Ent., XLIV, 10, p. 301 (1912).

Can. Ent., XLV, 1, p. 14 (1913).

Habitat—Arizona, Colorado.

On *Amelanchier*.

Pseudococcus calluneti Lindinger.

Pseudococcus calluneti Lindgr., Die Schildläuse, p. 90 (1912).

Habitat—Denmark.

On *Calluna*.

Pseudococcus capensis Brain.

Pseudococcus capensis Brain, Ann. Ent. Soc. Am., v, 2, p. 182 (1912). Fig.

Habitat—South Africa.

On *Phytolacca dioica*, *Albizzia lophantha*, *Solanum sodomæum*, *Clematis vitalba*, *Pclargonium* sp., *Sonchus olcraceus*, *Senecio vulgaris*, *Malva parviflora*, *Oxalis cornua*, stored pumpkins and vines.

Pseudococcus fragilis Brain.

Pseudococcus fragilis Brain, Ann. Ent. Soc. America, v, 2, p. 186 (1912).

Habitat—South Africa.

On Orange.

Pseudococcus lounsburyi Brain.

Pseudococcus lounsburyi Brain, Ann. Ent. Soc. America, v, 2, p. 179 (1912).

Fig.

Habitat—South Africa.

On *Agapanthus umbellatus*.

Pseudococcus marchali Vayssiere.

Pseudococcus marchali Vayss., Bul. Soc. Ent. Fr., 17, p. 366 (1912). Fig.

Vayss., Ann. Service Epiphyties, I, p. 428 (1913).

Habitat—Upper Guinea, Africa.

On mango.

Pseudococcus muraltiæ Brain.

Pseudococcus muraltiæ Brain, Ann. Ent. Soc. America, v, 2, p. 184 (1912).

Fig.

Habitat—South Africa.

On *Muraltia heisteria*.

Pseudococcus nicotianæ Leonardi.

Pseudococcus nicotiana Leon., Boll. Tec. d. Colt. d. Talac. (Seafati), XII, 2, p. 76 (1913).

Habitat—Prov. Salerno, Italy.

On *Nicotiana colossea*, *N. macrophylla*.

Pseudococcus phoradendri Cockerell.

Pseudococcus phoradendri Ckll., Jn. N. Y. Ent. Soc., xx, 2, p. 133 (1912).

Habitat—Arizona.

In hollow stems of *Phoradendron flavescens*, var. *villosum*, attended by *Cremastogaster arizonensis* Wheeler.

Pseudococcus wachendorfiæ Brain.

Pseudococcus wachendorfiæ Brain, Ann. Ent. Soc. America, v, 2, p. 183 (1912). Fig.

Habitat—South Africa.

On *Wachendorfia paniculata*.

Pseudococcus yerba-santæ Essig.

Pseudococcus yerba-santa Essig, Jn. Ent. and Zool., v, 2, p. 85 (1913). Fig.

Habitat—California.

On Yerba Santa or Mountain Balm (*Eriodictyon californicum*).

Ripersia taquaræ Hempel.

Ripersia taquaræ Hemp., Cat. Faun. Brazil, III, S. Paulo, pp. 25, 58 (1912).

Habitat—S. Paulo, Brazil.

On interior of large cane accompanied by ants.

Subfamily TACHARDINÆ.

Tachardia angulata Froggatt.

Tachardia angulata Froggatt, Pr. Linn. Soc. N. S. Wales, xxxvi, 1, p. 154 (1911).

Habitat—N. S. Wales.

On quince trees.

Genus COLOBOPYGA Brèthes. Type, **magnani**.

Colobopyga Brèthes, An. Mus. Nac. Buenos Aires, xxiii, p. 279 (1912).

Colobopyga magnani Brèthes.

Colobopyga magnani Brèthes, An. Mus. Nac. Buenos Aires, xxiii, p. 281 (1912).

Habitat—Buenos Aires.

On *Chamarops humilis*.

Subfamily COCCINÆ.

Aclerda signoreti Lindinger.*Aclerda signoreti* Lindgr., Die Schildläuse, p. 170 (1912).

Habitat—France, Austria.

On grass.

Ceronema africana Scott Macfie.*Ceronema africana* Scott Macfie, Bul. Ent. Res., iv, 1, p. 31 (1913). Fig.

Vayss., Bul. Soc. Ent. Fr., 7, p. 208 (1914).

Habitat—Northern Nigeria.

On "Pride of Barbadoes" (*Cusalspinia pulcherrima*).**Ceroplastes coniformis** Newstead.*Ceroplastes coniformis* Newst., Bul. Ent. Res., iv, 1, p. 72 (1913). Fig.

Gowdey, Bul. Ent. Res., iv, 3, p. 248 (1913).

Habitat—Uganda.

On *Ficus* sp.**Ceroplastes excæcariæ** Hempel.*Ceroplastes excæcariæ* Hemp., Cat. Faun. Brazil, III, S. Paulo, pp. 33, 66 (1912). Fig.

Habitat—S. Paulo, Brazil.

On *Excæcaria biglandulosa*.**Ceroplastes gigas** Cockerell.*Ceroplastes gigas* Ckll., Bul. Am. Mus. N. H., XXXIII, Art. xxv, p. 331 (1914). Fig.

Habitat—Philippine Islands.

On ?

Coccus citricola Campbell.*Coccus citricola* Campb., Ent. News, xxv, 5, p. 222 (1914).

Habitat—California.

On Citrus.

Lecanium filamentosum Newstead.*Lecanium filamentosum* Newst., Bul. Ent. Res., iv, 1, p. 74 (1913). Fig.

Gowdey, Bul. Ent. Res., iv, 3, p. 248 (1913).

Habitat—Uganda.

On unknown forest shrub.

Lecanium opimum Green.*Lecanium opimum* Green, Tijdschr. Ent., LV, p. 313 (1913). Fig.

Habitat—Java.

On *Cassia fistula*.

Lecanium perinflatum Cockerell.

Lecanium perinflatum Ckll., Bul. Am. Mus. N. H., xxxiii, Art. xxv, p. 332 (1914). Fig.

Habitat—Argentine Republic.

On herbaceous plant.

Lecanium pseudomagnoliarum Kuwana.

Eulecanium pseudomagnoliarum Kuw., Jn. Ent. and Zool., Pomona, vi, 1, p. 7 (1914). Fig.

Habitat—Japan.

On *citrus*.

Mesolecanium lucidum Hempel.

Mesolecanium lucidum Hemp., Cat. Faun, Brazil, iii, S. Paulo, pp. 38, 67 (1912).

Habitat—State of Rio Grande do Sul, Brazil.

On Solanaceæ.

Paralecanium luzonicum Cockerell.

Paralecanium luzonicum Ckll., Bul. Am. Mus. N. H., xxxiii, Art. xxv, p. 333 (1914).

Habitat—Philippine Islands.

On *Plectronia viridis*.¹

Protopulvinaria longivalvata bakeri Cockerell.

Protopulvinaria longivalvata bakeri Ckll., Bul. Am. Mus. N. H., xxxiii, Art. xxv, p. 333 (1914). Fig.

Habitat—Philippine Islands.

On leaves of *Voacanga globosa*.²

Pseudokermes cooleyi King.

Pseudokermes cooleyi King, Jn. Econ. Ent., vii, 2, p. 246 (1914).

Habitat—Montana.

On *Picea englemanni*.

Pulvinaria citricola Kuwana.

Pulvinaria citricola Kuw., Jn. Ent. and Zool., Pomona, vi, 1, p. 3 (1914). Fig.

Habitat—Japan.

On Citrus, *Diaspyros kaki*, *Hibiscus syriacus*.

Pulvinaria idesiæ Kuwana.

Pulvinaria idesiæ Kuw., Jn. Ent. and Zool., Pomona, vi, 1, p. 6 (1914). Fig.

Habitat—Japan.

On *Idesia polycarpa*, *Phellodendron amurense*.

¹ Incorrectly cited as *Alectronia*.

² Incorrectly cited as "boacanga."

Pulvinaria okitsuensis Kuwana.

Pulvinaria okitsuensis Kuw., Jn. Ent., and Zool., Pomona, vi, 1, p. 5 (1914). Fig.

Habitat—Japan.

On Orange.

Pulvinaria ornata Hempel.

Pulvinaria ornata Hemp., Cat. Faun. Brazil, III, S. Paulo, pp. 28, 61 (1912).

Habitat—S. Paulo, Brazil.

On *Arrabidaea*. (Bignoniaceæ)

Pulvinaria photiniæ Kuwana.

Pulvinaria photiniæ Kuw., Jn. Ent. and Zool., Pomona, vi, 1, p. 4 (1914).

Fig.

Habitat—Japan.

On *Photinia villosa*, *Celtis sincensis*.

Megasaissetia brasiliensis Hempel.

Megasaissetia brasiliensis Hemp., Cat. Faun. Brazil., III, S. Paulo, pp. 42, 68 (1912).

Habitat—S. Paulo, Brazil.

On ?

Saissetia lucida Hempel.

Saissetia lucida Hemp., Cat. Faun. Brazil, III, S. Paulo, pp. 41, 60 (1912).

Habitat—S. Paulo, Brazil.

On bark of forest tree.

Stictococcus gowdeyi Newstead.

Stictococcus gowdeyi Newst., Bul. Ent. Res., iv, 1, p. 70 (1913). Fig.

Gowdey, Bul. Ent. Res., iv, 3, p. 249 (1913).

Gowdey, Ann. Rept. Dept. Agr., Uganda Protec., p. 29 (1913).

Habitat—Uganda.

On *Haronga madagascariensis*; Coffee.

Subfamily DIASPINÆ.

Aspidiotus alatus Froggatt.

Aspidiotus alatus Froggatt, Agr. Gaz. N. S. W., xxv, 2, p. 132 (1914). Fig.

Habitat—New South Wales, Victoria.

On *Eucalyptus rostrata*, *Eucalyptus* sp.

Aspidiotus confusus Froggatt.

Aspidiotus confusus Frogg., Agr. Gaz., N. S. W., xxv, 2, p. 136 (1914).

Fig.

Habitat—New South Wales.

On white gum (*Eucalyptus* sp.).

Aspidiotus ephedrarum Lindinger.*Aspidiotus ephedrarum* Lindgr., Die Schildläuse, p. 139 (1912).

Habitat—Sardinia, South East Spain.

On *Ephedra nebrodensis*, *E. scoparia*.**Aspidiotus gidgei** Froggatt.*Aspidiotus gidgei* Frogg., Agr. Gaz. N. S. W., xxv, 4, p. 313 (1914).

Habitat—New South Wales.

On Gidgei (*Acacia cambagei*).**Aspidiotus gowdeyi** Newstead.*Aspidiotus gowdeyi* Newst., Bul. Ent. Res., iv, 1, p. 77 (1913). Fig.

Gowdey, Bul. Ent. Res., iv, 3, p. 249 (1913).

Habitat—Uganda.

On *Anona muricata*.**Aspidiotus junctilobius** Froggatt.*Aspidiotus junctilobius* Frogg., Agr. Gaz. N. S. W., xxv, 4, p. 315 (1914)

Fig.

Habitat—Southwestern New South Wales.

On yarran (*Exocarpus aphylla*).**Aspidiotus lenticularis** Lindinger.*Aspidiotus lenticularis* Lindgr., Die Schildläuse, pp. 149, 230 (1912).

Habitat—Denmark.

On ?

Aspidiotus rubribullatus Froggatt.*Aspidiotus (Aspidiella) rubribullata* Frogg., Agr. Gaz. N. S. W., xxv, 4, p. 317 (1914). Fig.

Habitat—West Australia, New South Wales.

On *Eucalyptus*.**Aspidiotus serratus** Froggatt.*Aspidiotus serrata* Frogg., Agr. Gaz. N. S. W., xxv, 4, p. 318 (1914).

Habitat—New South Wales.

On leaves of Gidgei or Mulga (*Acacia cambagei*).**Aspidiotus tafiranus** Lindinger.*Aspidiotus tafiranus* Lindgr., Die Schildläuse, p. 229 (1912).

Habitat—Canary Islands.

On *Olea* sp.**Gymnaspis acaciæ** Froggatt.*Gymnaspis acaciæ* Frogg., Agr. Gaz. N. S. W., xxv, 7, p. 604 (1914). Fig.

Habitat—New South Wales.

On "Weeping Myall" (*Acacia pendula*).

Gymnaspis africana Newstead.

Gymnaspis africana Newst., Bul. Ent. Res., iv, 1, p. 78 (1913). Fig.
Gowdey, Bul. Ent. Res., iv, 3, p. 249 (1913).

Habitat—Uganda.

On unknown forest shrub.

Hemiberlesia nitrariæ Marchal.

Aspidiotus (Hemiberlesia) nitrariæ Marchal, Bul. Soc. Zool. France, xxxvi,
45 and 6, p. 150 (1911).

Habitat—South Tunis.

On *Nitraria*.

Hemiberlesia provincialis Vayssiere.

Aspidiotus (Hemiberlesia) provincialis Vayss., Bul. Soc. Ent. Fr., 7, p.
207 (1914).

Habitat—Bouches du Rhone, France.

On Grass (*Ammophila arenaria* (?)).

Odonaspis schizostachyi Cockerell and Robinson.

Odonaspis schizostachyi Ckll. and Robinson, Bul. Am. Mus. N. H., xxxiii,
Art. xxv, p. 327 (1914). Fig.

Habitat—Philippine Islands.

On climbing bamboo (*Schizostachyum* sp.)

Targionia carolina Froggatt.

Aspidiotus (Targionia) carolinus Frogg., Agr. Gaz. N. S. W., xxv, 2, p.
136 (1914). Fig.

Habitat—New South Wales.

On *Eremophila sturtii* (Myoporineæ).

Targionia laurina Lindinger.

Targionia laurina Lindgr., Die Schildläuse, p. 198 (1912).

Habitat—Madeira.

On *Laurus canariensis*.

Pseudotargionia Lindinger n. subg. of *Targionia*. Type, *glandulosa*
Newst.

Lindinger, Die Schildläuse, p. 50 (1912).

Aulacaspis manzanitæ Whitney.

Aulacaspis manzanitæ Whitney, Jn. Ent. and Zool., v, 1, p. 50 (1913).
Fig.

Habitat—California.

On *Arctostaphylos*, *Manzanita* sp.

Epidiaspis subterranea Lindinger.

Epidiaspis subterranea Lindgr., Die Schildläuse, p. 174 (1912).

Habitat—France.

On Grass.

Diaspis senegalensis Vayssiere.

Diaspis senegalensis Vayss., Bul. Soc. Ent. Fr., 7, p. 206 (1914). Fig.

Habitat—Senegal.

On leaves of *Khaya senegalensis*.

Diaspis syriaca Lindinger.

Diaspis syriaca Lindgr., Die Schildläuse, p. 264 (1912).

Habitat—Syria.

On *Pistacia vera*.

Diaspis taxicola Vayssiere.

Diaspis taxicola Vayss., Rev. Phytopath. Appliquée, Paris, 1, 9, p. 124 (1913).

Habitat—Algeria.

On *Taxus baccata*.

Phenacaspis mischocarpi Cockerell and Robinson.

Phenacaspis mischocarpi Kkll. and Robinson, Bul. Am. Mus. N. H., XXXIII, Art. XXV, p. 328 (1914). Fig.

Habitat—Philippine Islands.

On *Mischocarpus fuscescens*.

Phenacaspis unilateralis Newstead.

Chionaspis unilateralis Newst., Bul. Ent. Res., iv, 1, p. 79 (1913). Fig.

Habitat—Barbados.

On leaves of palm (*Thrimar* ?).

Protodiaspis agrifoliae Essig.

Protodiaspis agrifoliae Essig, Jn. Ent. and Zool., vi, 2, p. 76 (1914). Fig.

Habitat—California.

On *Quercus agrifolia*.

Chionaspis austriaca Lindinger.

Chionaspis austriaca Lindgr., Die Schildläuse, p. 252 (1912).

Habitat—Austria (Piesting?).

On *Pinus laricio nigricans*.

Chionaspis nigerensis Vayssiere.

Chionaspis nigerensis Vayss., Bul. Soc. Ent. Fr., 17, p. 368 (1912). Fig.

Vayss., Ann. Service Epiphyties, 1, p. 428 (1913).

Habitat—Upper Senegal—Niger, Africa.

On *Xymenia americana*.

Hemichionaspis uvariae Cockerell and Robinson.

Hemichionaspis uvariae Kkll. and Robinson, Bul. Am. Mus. N. H., XXXIII, Art. XXV, p. 330 (1914). Fig.

Habitat—Philippine Islands.

On leaves of *Uvaria* sp.

Lepidosaphes chitinos Froggatt.*Mytilaspis chitinos* Frogg., Agr. Gaz. N. S. W., xxv, 7, p. 607 (1914).

Fig.

Habitat—New South Wales.

On Native Broom (*Templetonia egena*).**Lepidosaphes cortrioides** Froggatt.*Mytilaspis cortrioides* Frogg., Agr. Gaz. N. S. W., xxv, 7, p. 609 (1914).

Habitat—New South Wales.

On Black Wattle (*Acacia decurrens*).**Lepidosaphes crassa** Froggatt.*Mytilaspis crassa* Frogg., Agr. Gaz. N. S. W., xxv, 7, p. 609 (1914).

Habitat—New South Wales.

On Ti-tree (*Melaleuca* sp.).**Lepidosaphes dispar** Vayssiere.*Mytilaspis (Coccoomytilus) dispar* Vayss., Rev. Phytopath. Appliqué.
Paris, I, 9, p. 124 (1913).

Vayss., Bul. Soc. Ent. Fr., 7, p. 208 (1914).

Habitat—Madagascar.

On Manihot.

Lepidosaphes eucalypti Froggatt.*Mytilaspis eucalypti* Frogg., Agr. Gaz. N. S. W., xxv, 7, p. 610 (1914)

Fig.

Habitat—New South Wales.

On *Eucalyptus piperita*.**Lepidosaphes juniperi** Lindinger.*Lepidosaphes juniperi* Lindgr., Die Schiklläuse, p. 188 (1912).

Habitat—Turkey in Asia.

On *Juniperus excelsa*.**Lepidosaphes lobulatus** Froggatt.*Mytilaspis lobulatus* Frogg., Agr. Gaz. N. S. W., xxv, 8, p. 686 (1914).

Fig.

Habitat—New South Wales.

On *Casuarina* sp.**Lepidosaphes mulgæ** Froggatt.*Mytilaspis mulgæ* Frogg., Agr. Gaz. N. S. W., xxv, 8, p. 681 (1914).

Habitat—New South Wales.

On Mulga or Gidgei (*Acacia cambagei*).**Lepidosaphes recurvata** Froggatt.*Mytilaspis recurvata* Frogg., Agr. Gaz. N. S. W., xxv, 8, p. 683 (1914).

Fig.

Habitat—New South Wales.

On Black Wattle (*Acacia decurrens*).

Genus **PARLATOREOPSIS** Lindinger. Type, *longispina* Newst.
Lindinger, Die Schildläusse, p. 191 (1912).

Pseudoparlatoria argentata Hempel.

Pseudoparlatoria argentata Hemp., Cat. Faun. Brazil, III, S. Paulo, pp. 51, 63 (1912).

Habitat—S. Paulo, Brazil.

On *Aglaia* sp.

DIPTEROLOGICAL MISCELLANY.

By FREDERICK KNAB, *Bureau of Entomology.*

EVOLUTION OF THE BLOOD-SUCKING HABIT IN SYMPHOROMYIA.

In several families of Diptera the blood-sucking habit is unequally developed in different species. Thus, in the Culicidæ we have within the same genus species that are aggressive blood-suckers, others that apparently have but a weak craving for blood, and still others that do not bite at all. Similar conditions appear to obtain in the chironomid subfamily Ceratopogoninæ, while in the family Psychodidæ the blood-sucking habit is restricted to the genus *Phlebotomus*.

The lepidid genus *Symphoromyia* has been reported as a blood-sucker several times, but, as its chief habitat is in the comparatively unsettled Rocky Mountain region, we have very little exact information on the habits of the different species. Prof. J. M. Aldrich, who has recently revised the genus, informs me that two species appear to be the principal biters and that he has only a single record for a third species. These data will appear in a paper which Prof. Aldrich now has in press. Some additional information has recently come to hand and the indications are that certain species of *Symphoromyia* are aggressive biters, while others are in process of acquiring the blood-sucking habit. Of course, it is possible that some of the inoffensive species feed upon animals other than man and the large mammals. A specimen and note recently sent in by W. H. Boyd of Cottonwood, British Columbia, adds a fourth species, *Symphoromyia pachyceras* Will., to the list of blood-suckers. The interesting part of the note is that it appears to show that this species is in a transition state. Mr. Boyd says that this species "bites for itself on unprotected portions of animals, but seems to prefer to take the blood oozing from a bite left by the larger fly" (*Tabanus*).

It must, however, be remembered that the species of *Symphoromyia* are all similar in appearance and that the individuals lapping the blood from wounds may belong to different species